ATEÏS

Public Address - Voice Alarm
Audio Distribution over IP
Commercial Audio
Intelligent Acoustic Solutions
Intercommunication
Loudspeakers

EN54 16

DPA*four*
Digital Power Amplifiers

Amplifiers and battery charger

DPAfour (Digital Power Amplifier), BPA (Sinewave Power Amplifier) and BPA (Basic Power Amplifier) are designed for public address or voice alarm system application. They were specifically developed to meet the requirements of EN54-16 and can therefore also be used as part of fire detection and fire alarm systems.

DELIVERING YOUR MESSAGE

DPA*four*

DIGITAL POWER AMPLIFIERS

Main characteristics

- 4 audio outputs (100/70/50 V / 4 Ohm selectable)
- Fault reporting outputs
- Four audio inputs with gain
- Advanced audio processing for each amplifier channel using DIVA8 or IDA8 systems
- Supervision of the amplifiers through DIVA8 or IDA8 systems
- Back up amplifier switching throught DIVA8 or IDA8 systems
- Loudspeaker line and loudspeaker impedance surveillance through DIVA8 or IDA8 systems
- Output bridging for higher power

Controls and indicators

- LED VU metering
- Status indicators for: Signal, Clip, Mains, Battery, Channel fault and General fault

Interconnections

Rear

- Rotary volume control
- Mains switch
- Mains input
- Battery backup input
- Four line inputs
- 100 V, 70 V, 50 V or 4 ohm outputs (for each amplifier channel)

Region Certifications

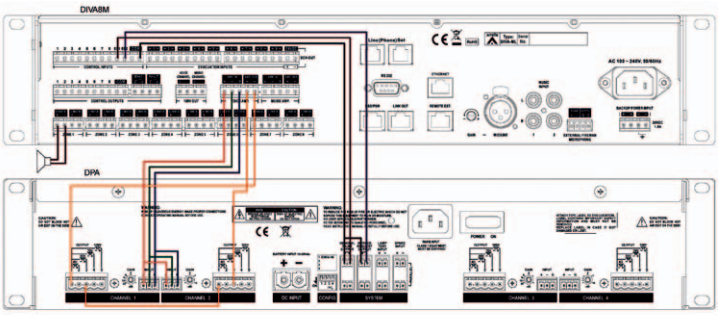
Europe	CE	CE – 0359 (Intertek)
	Immunity	according to EN50103-4
	PAVA	EN54-16 certified 2012

The DPAfour is a 2U 19" rack mountable, 4-channel class-D power amplifier, transformer isolated for 100 V, 70 V, 50 V and 4 Ohm distributed loudspeaker systems. There are two models in the DPAfour range: DPAfour125 rated at 4 x 125 W and DPAfour250 at 4 x 250 W.

Each channel can deliver up to 250 W when used as separate channel or can be bridged to deliver higher power. The amplifier has a dual-voltage mains supply 110/230V AC and a 24 V DC battery back-up input which allows it to be used in combination with a battery backup system for maximum availability and reliability in an emergency evacuation system. DPAfour amplifiers have short-to-ground, short-circuit detection and line-impedance surveillance up to 5% deviation using the DIVA8 or IDA8 systems for loudspeaker-line surveillance. They support both single-spure and redundant loop cabling (A/B).

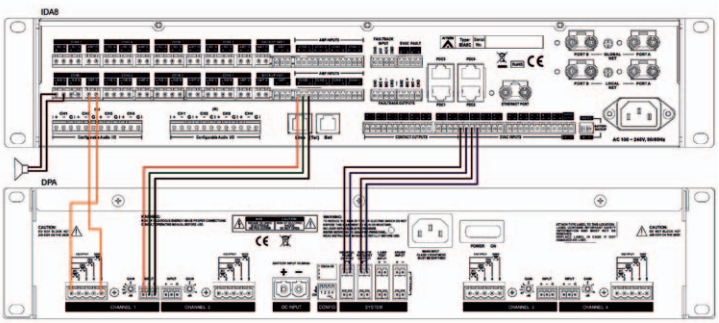
The DPAfour amplifiers have a single power supply that shares redundancy via the SONAES battery charger and redundant power supply. Using an intelligent switching construction, one SONAES can serve up to seven DPAfour amplifiers and three IDA8 units, or one DIVA8 with nine slaves. In case an internal power supply fails, the amplifier modules will automatically switch over to the backup power supply provided by the SONAES, leaving the batteries untouched and available for emergency cases.

DIVA & DPA Wiring example with DPA Ch 1&2 bridged*



* If DPA channels are bridged, gain settings should be set at equal level for both channel 1&2 and/ or 3&4

IDA8 & DPA Wiring example



DPA*four*

DIGITAL POWER AMPLIFIERS

Parts Included

Quantities	Components
1	DPA xxxx Digital Power Amplifier
1	Power cord
1	Set of connectors
1	Set of feet

Technical Specifications

Electrical	
Mains power supply	
Voltage	115 or 230 VAC ±15%, 50/60 Hz
Power consumption**	standby - idle* - Pmax
DPA4125	1 W – 38 W – 600 W
DPA4250	1 W – 44 W – 1169 W
**(Total Mains-power consumption @ 230 VAC)	
*(Alarm cycle + 10 V pilot-tone @ 24 VDC)	

Battery power supply	
Voltage	19-30 VDC
Power consumption***	standby - idle* - Imax
DPA4125	0.03 A – 1.45 A – 22.5 A
DPA4250	0.03 A – 1.65 A – 43.85 A
***(Total DC-current @ 24 VDC)	
*(Alarm cycle + 10 V pilot-tone @ 24 VDC)	

Line inputs	4 x (One per channel)
Connector	3-pin phoenix
Frequency response	+/-3 dB @ 50 Hz and 20 kHz
S/N	> 90 dB
THD	< 0,1% @ 1 kHz
Input sensitivity	770 mV
Input impedance	20 kOhm

Loudspeakers outputs	DPA4125
Rated load resistance	80 ohm (100 V)
Rated load capacitance	62,5 nF (100 V)
Rated output power (per channel)	125 W (cont. at 40°C)
Two channels bridged	250 W (cont. at 40°C)

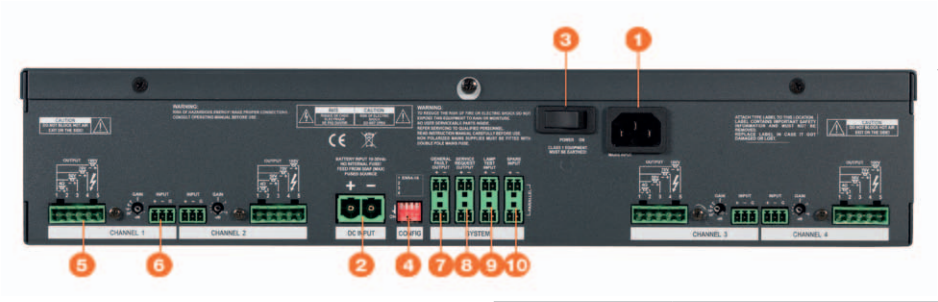
Loudspeakers outputs	DPA4250
Rated load resistance	40 ohm (100 V)
Rated load capacitance	120 nF (100 V)
Rated output power (per channel)	250 W (cont. at 40°C)
Two channels bridged	500 W (cont. at 40°C)

Frequency response	40 Hz to 20 kHz(-3 dB)
S/N	>90 dB (no pilot tone)
Crosstalk	<70 dB at nominal load for 1 kHz
Distortion	<0,1% (@ 1 kHz) @ -10dB of rated outputpower

Mechanical	
Dimensions (H x W X D)	
19" rack use, with brackets	88,5 x 483 x 370 mm
Weight	
DPA 4125	14 kg (31 lb)
DPA 4250	18 kg (40 lb)
Mounting	19"-rackmount
Colour	RAL7016

Environmental	
Operating temperature	-5 °C to +55 °C (+23 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	15% to 90%
Air pressure	600 to 1100 h Pa

Ordering Informations
DPAfour125, Digital Power Amplifier
DPAfour250, Digital Power Amplifier



1.	AC Power inlet
2.	AC/DC Fuse
3.	Power switch
4.	24 VDC backup
5.	Channel 1-4 audio outputs
6.	Channel 1-4 audio inputs
7.	General fault output contact
8.	Service request output contact
9.	Lamp test input contact
10.	Spare input contact

CE 12
0359-CDP-0177
0359-CDP-0140

SPA

SINEWAVE POWER AMPLIFIERS

Main characteristics

- 2 audio outputs (100/70 / 8 Ohm outputs selectable)
- Fault reporting outputs
- Two audio inputs with gain-set
- Supervision of the amplifiers using DIVA8 or IDA8 controllers
- Advanced audio processing for each amplifier channel using DIVA8 or IDA8 systems
- Amplifier supervision and spare amplifier switching through DIVA8 or IDA8 systems
- Loudspeaker line and loudspeaker supervision through DIVA8 or IDA8 systems

Controls and indicators

- LED VU metering
- Status indicators for: Overload, Temperature control, Battery and Mains

Interconnections

Rear

- Rotary volume control
- Mains switch
- Mains input
- Battery backup input
- Two line inputs
- 100 V, 70 V, and 8 ohm outputs (for each amplifier channel)

Certifications and Approvals

Region	Certifications	
Europe	CE	CE – 0359 (Intertek)
	Immunity	according to EN50103-4
	PAVA	EN54-16 certified 2012

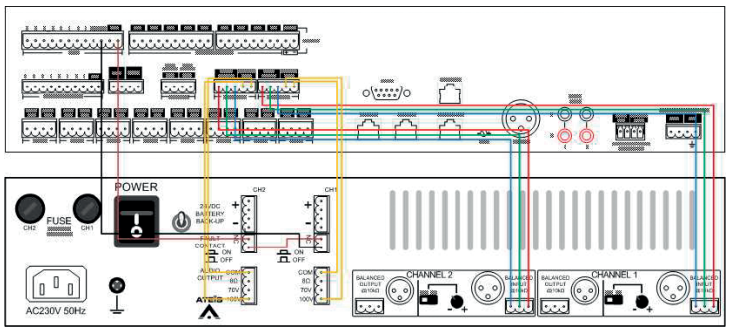
There are two types of power amplifier units in the SPA-PAVA product range. The overall power rating is 2x120 or 2x240 watts. The power amplifiers can be set to 100 V, 70 V and 8 Ohm output tappings. They have short-to-ground, short-circuit detection and line-impedance surveillance up to 5% deviation using the DIVA8 and IDA8 range of products for loudspeaker-line surveillance.

They support both single-spure and redundant loop cabling (A/B). The amplifiers have a changeover facility for spare power amplifier switching. Both features are facilitated by the DIVA8 and IDA8 controllers and slaves. The amplifiers have a 24 VDC back-up supply input.

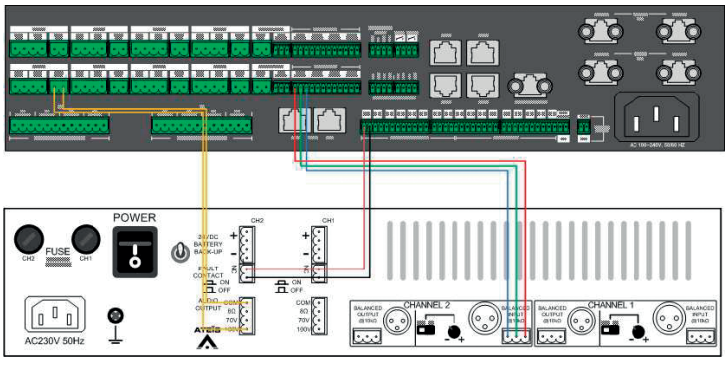
Functions

The power amplifiers receive line-level input signals from the DIVA8 and IDA8 controllers and slaves. The display shows the VU-meter reading, when the EN54-16 default switch is inhibited.

DIVA8



IDA8 8



SPA

SINEWAVE POWER AMPLIFIERS

Parts Included

Quantities	Components
1	SPA 2xxx Sinewave Power Amplifier
1	Power cord
1	Set of mounting brackets for 19" rack
1	Set of connectors
1	Set of feet

Technical Specifications

Electrical	
Mains power supply	
Voltage	230 VAC ±10%, 50/60 Hz
Power consumption**	standby - idle* - Pmax
SPA 2120	28 W – 150 W – 322 W
SPA 2240	64 W – 287 W – 655 W
* Idle: Measured with 10 Volt surveillance tone on the output.	
**(Total Mains-power consumption)	

Battery power supply	
Voltage	21-28 VDC
Power consumption**	standby - idle* - Imax
SPA 2120	0.25 A – 2.9 A – 6.4 A
SPA 2240	0.30 A – 5.47 A – 12.3 A
**(Per ch. @ 28 VDC)	
*(Alarm cycle + 10 V pilot-tone @ 28 VDC)	

Line inputs	2 x (One per channel)
Connector (electronically balanced)	3-pin XLR and 3-pin phoenix
Frequency response	+/-3 dB @ 40 Hz and 20 kHz
S/N	> 90 dBA
THD	< 1% @ 1 kHz
Input range	-6 dBV to 6 dBV / 770mV
Input impedance	22 kOhm

Loudspeaker outputs	SPA2120
Rated load resistance	100 Ohm (100 V); 50 Ohm (70 V)
Rated load capacitance	60 nF (100 V); 125 nF (70 V)
Rated output power (per channel)	120 W (cont. at 40°C)

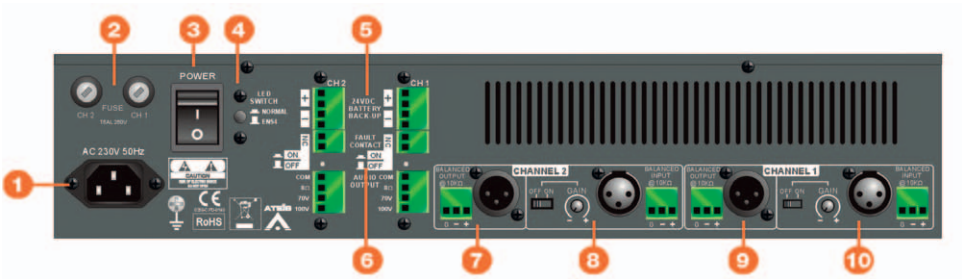
Loudspeaker outputs	SPA2240
Rated load resistance	40 Ohm (100 V); 20 Ohm (70 V)
Rated load capacitance	125 nF (100 V); 250 nF (70 V)
Rated output power (per channel)	240 W (cont. at 40°C)

Frequency response	40 Hz to 20 kHz(-3 dB)
S/N	> 90 dB (no pilot tone)
Crosstalk	< 80 dB at nominal load for 1 kHz
Distortion	< 1% (@ 1 kHz) @ -10dB of rated output

Mechanical	
Dimensions (H x W x D)	
for tabletop use, with feet	92 x 440 x 305 mm
for 19" rack use, with brackets	88 x 483 x 305 mm
Weight	
SPA 2120	12,3 kg (27,1 lb)
SPA 2240	18,5 kg (40,8 lb)
Mounting	Standalone or 19"-rackmount
Colour	RAL7016

Environmental	
Operating temperature	-5 °C to +55 °C (+23 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	15% to 90%
Air pressure	600 to 1100 h Pa

Ordering information
SPA 2120
SPA 2240



1.	AC Power inlet
2.	AC/DC Fuse
3.	Power switch
4.	Configuration switches for EN54-16 compliances
5.	Channel 1/2 24 VDC battery backup connector
6.	Fault contact
7.	Channel 1 output
8.	Channel 1 input
9.	Channel 2 output
10.	Channel 2 input

CE 12
0359-CDP-0177
0359-CDP-0140

BPA

BASIC POWER AMPLIFIERS

Main characteristics

- 2 audio outputs for BPA2120, 2240 and 2480 (100 V / 70 V / 50 V selectable outputs)
- Fault reporting outputs
- Two audio inputs with gain-set
- Supervision of amplifiers through DIVA8 or IDA8 systems
- Advanced audio processing for each amplifier channel through DIVA8 or IDA8 systems
- Amplifier supervision and spare amplifier switching through DIVA8 and IDA8 systems
- Louspeaker line and loudspeaker supervision through DIVA8 and IDA8 systems

Controls and indicators

- LED VU metering
- Status indicators for: Overload, Temperature control, Battery and Mains

Interconnections

Rear

- Rotary volume control at the rear of the device
- Mains switch at the rear of the device
- Mains input
- Battery backup input
- Two line inputs
- 100 V, 70 V and 8 ohm outputs (for each amplifier channel)

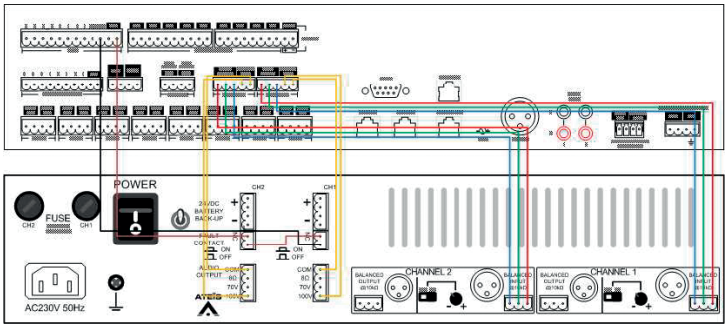
Certifications and Approvals

Region	Certifications	
Europe	CE	CE – 0359 (Intertek)
	Immunity	according to EN50103-4
	PAVA	EN54-16 certified 2012

The BPA is a 2U 19" rack-mountable, 2-channel amplifier, transformer isolated for 100 V, 70 V and 8 Ohm distributed loudspeaker systems. There are three models in the BPA range: BPA2120 at 2 x 120 W, BPA2240 at 2 x 240 W and BPA2480 at 2 x 480 W.

The BPA amplifier has a 230 V AC mains supply input and a 24 V DC battery back-up input which allows it to be used in combination with a battery backup system for maximum availability and reliability in an emergency evacuation system. BPA amplifiers have short-to-ground, short-circuit detection and line-impedance surveillance up to 5% deviation using the DIVA8 or IDA8 systems for loudspeaker-line surveillance. They support both single-spure and redundant loop cabling (A/B) and have a switchover facility that automatically reroutes power to a backup amplifier (if present) via the SONAES charger in the event of failure. BPA amplifiers have a rear-panel selector switch for amplifier monitoring according to EN 54-16.

DIVA8



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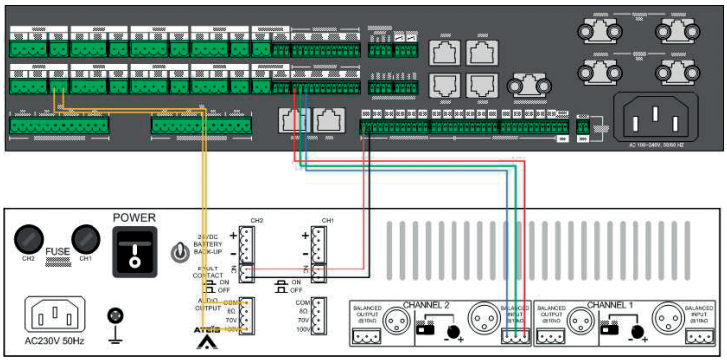


BPA

BASIC POWER AMPLIFIERS

Parts Included

Quantities	Components
1	BPA 2xxx Basic Power Amplifierr
1	Power cord
1	Set of mounting brackets for 19" rack
1	Set of connectors
1	Set of feet

Technical Specifications

Electrical	
Mains power supply	
Voltage	230 VAC ±10%, 50/60 Hz
Power consumption**	standby - idle* - Pmax
BPA 2120	16 W – 74 W – 154 W
BPA 2240	28 W – 150 W – 322 W
BPA 2480	64 W – 287 W – 655 W
* Idle: Measured with 10 Volt surveillance tone on the output.	
**(Total Mains-power consumption)	

Battery power supply	
Voltage	21-28 VDC
Power consumption**	standby - idle* - Imax
BPA 2120	0.19 A – 1.5 A – 3.2 A
BPA 2240	0.25 A – 2.9 A – 6.4 A
BPA 2480	0.30 A – 5.47 A – 12.3 A
**(Per ch. @ 28 VDC)	
*(Alarm cycle + 10 V pilot-tone @ 28 VDC)	

Line inputs	2 x (One per channel) 8 x for BPA8060
Connector	3-pin XLR and 3-pin phoenix (electronically balanced)
Frequency response	+/-3 dB @ 40 Hz and 20 kHz
S/N	>90 dBA
THD	<1% @ 1 kHz
Input range	-6 dBV to 6 dBV / 770mV
Input impedance	22 kOhm

Loudspeakers outputs	BPA2120
Rated load resistance	100 ohm (100 V); 50 ohm (70 V)
Rated load capacitance	60 nF (100 V); 125 nF (70 V)
Rated output power (per channel)	120 W (1 min. at 40°C) 60 W (cont. at 40°C)

Loudspeakers outputs	BPA2240
Rated load resistance	40 ohm (100 V); 20 ohm (70 V)
Rated load capacitance	125 nF (100 V); 250 nF (70 V)
Rated output power (per channel)	240 W (1 min. at 40°C) 120 W (cont. at 40°C)

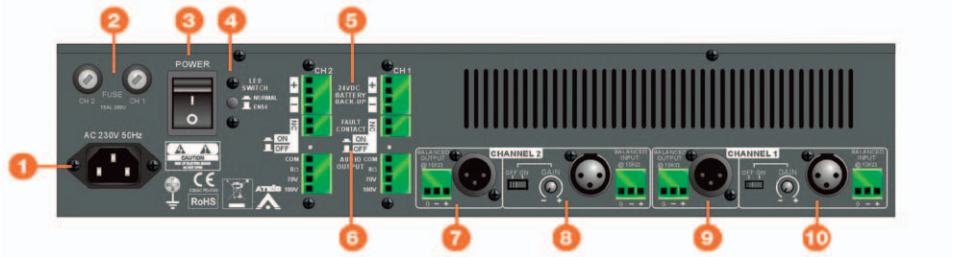
Loudspeakers outputs	BPA2480
Rated load resistance	20 ohm (100 V); 10 ohm (70 V)
Rated load capacitance	250 nF (100 V); 500 nF (70 V)
Rated output power (per channel)	480 W (1 min. at 40°C) 240 W (cont. at 40°C)

Frequency response	120 Hz to 20 kHz (-3 dB)
S/N	> 90 dB (no pilot tone)
Crosstalk	< 80 dB at nominal load for 1 kHz
Distortion	< 1% (@ 1 kHz) @ -10dB of rated output

Mechanical	
Dimensions (H x W x D)	
for tabletop use, with feet	92 x 440 x 305 mm
for 19" rack use, with brackets	88 x 483 x 305 mm
Weight	
BPA 2120	10,6 kg (23,3 lb)
BPA 2240	12,3 kg (27,1 lb)
BPA 2480	18,5 kg (4,8 lb)
Mounting	Standalone or 19"-rackmount
Colour	RAL7016

Environmental	
Operating temperature	-5 °C to +55 °C (+23 °F to +131 °F)
Storage temperature	-40 °C to +70 °C (-40 °F to +158 °F)
Relative humidity	15% to 90%
Air pressure	600 to 1100 h Pa

Ordering Informations	
BPA 2120	2 x 120 W
BPA 2240	2 x 240 W
BPA 2480	2 x 480 W



1.	AC Power inlet
2.	AC/DC Fuse
3.	Power switch
4.	Configuration switches for EN54-16 compliances
5.	Channel 1/2 24 VDC battery backup connector
6.	Fault contact
7.	Channel 1 output
8.	Channel 1 input
9.	Channel 2 output
10.	Channel 2 input

SONAES

CHARGER AND MONITORING UNIT - EN 54-4

Main characteristics

Soneas 6/40

- **2U-rackmount charger**
- **3 Auxiliary outputs, max. 5 Amp combined load**
- **2 Main outputs, max. 40 Amp combined load**
- **Battery capacity: 85 AH to 225 AH**

Soneas 12/150

- **2U-rack-frame charger**
- **3 Auxilairy outputs, max. 5 Amp combined load**
- **6 Main outputs, max. 20A mp/ch**
- **Battery capacity: 85 AH to 225 AH**

Certifications and Approvals

Region	Certifications	
Europe	CE	CE – 0333 (AFNOR)
	Immunity	according to EN50103-4
	PAVA	EN54-4 certified 2010

Parts Included

Quantities	Components
1	SONEAS 6/40A or SONEAS 12/150A
1	Power cord
1	Set of connectors

Ordering Information
SONEAS 6/40
SONEAS 12/150

The SONEAS series of battery chargers (24 Vdc) are intended for a Voice Alarm System. The battery chargers are microprocessor based devices that have been designed to charge lead-acid batteries (back-up batteries connected to the Voice Alarm System) and, simultaneously, to provide power to auxiliary devices such as the DIVA8 and IDA8 system controllers

The SONEAS battery chargers, which are fully compliant with EN54-4, offers a maximum charge current of 6 or 12 A. The battery charger is two rack units high, and has to be installed in a 19" rack. Maximum battery capacity: 225 AH.

Overview

To find the right power back-up system for your needs, you will need to determine the exact conditions under which you will be utilizing a back-up system. Determining the amount of battery back-up you need for a system is not as simple as some other applications. Public address systems do not draw a constant current. The standard defines a standby time and an evacuation time. In this case, it is important to pick a battery back-up that can supply the minimum amount of power needed for a set amount of time. ATEIS can provide you with a battery calculator program to determine the exact capacity.

Regular procedure as follows:

1. Determine the standby current of the system. This information is available in the voice alarm system manual.
2. Multiply the standby current by the standby time that the local standards call for. Typically this is 24 hours.
3. Compare this value to the 24 hour discharge capacity of the battery.
4. Determine the evacuation current of the system. This information is available in the voice alarm system manual.
5. Multiply the evacuation current by the time that the local standards call for. Typically this is one hour or 30 minutes.
6. Compare this value to the 30 minute or 60 minute hour discharge capacity of the battery.

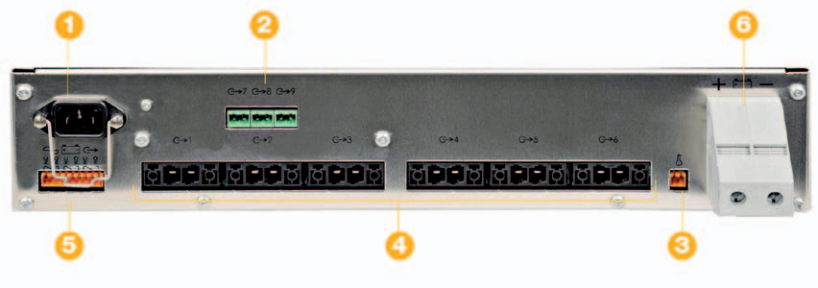
SONAES

CHARGER AND MONITORING UNIT - EN 54-4

Technical Specifications

Electrical	
Mains power supply	
Voltage	115 or 230 VAC ±15%, 50/60 Hz
Power consumption	380 W at Full load
Battery power supply	
Voltage	24 VDC
Maximum charging current	
Soneas 6/40	6 Amp
Soneas 12/150	12 Amp
Ouputs	
Main for amplifiers	
Soneas 6/40	2 x 20 A
Soneas 12/150	6 x 40 A
Auxiallairy for controllers	3 x
Maximum current	5 Amp
Batteries	4x 12 VDC, 85 to 225AH
Brands	Yuasa NPL series Powersonic GB series ABT TM series Enersys VE series Effekta BTL series Long GB series
Mechanical	
Dimensions (H x W X D)	
19" rack use, with brackets	44 x 483 x 310 mm
Weight	
SONEAS 6/40	4.9 kg (10.8 lb)
SONEAS 12/150	6 kg (13 lb)
Mounting	19"-rackmount
Colour	RAL7016
Environmental	
Operating temperature	-5 °C to +45 °C
Storage temperature	-25 °C to +85 °C
Relative humidity	20% to 95%
Air pressure	600 to 1100 h Pa

Rear layout of SONAES 12/150



1.	Main power socket
2.	Auxiliary output terminals
3.	Temperature sensor
4.	Main output terminals
5.	Output contacts
6.	Battery terminal

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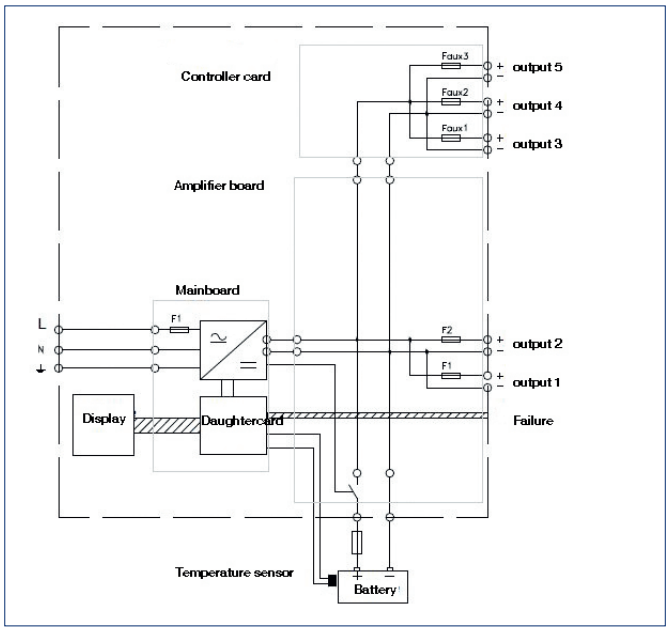
0333-CPD-075382
Soneas 6/40

CE
0333-CPD-075381
Soneas 12/150

Installation Notes for SONAES 6/40



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Commercial Audio

Intelligent Acoustic Solutions

Intercommunication

Loudspeakers

ATEÏS

EN54 16

BPA

Basic Power Amplifiers

SPA

EN54 16

Sinewave Power Amplifiers

SONAES

Charger and Monitoring Unit

EN54 4

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